REMARKS/ARGUMENTS

The Office Action mailed December 19, 2003, has been received and reviewed. Claims 1 through 29 are currently pending in the application. Claims 1 through 29 stand rejected by the Office Action (See "Teleconference with Examiner" below). Applicants have amended claims 1, 2, 5, 13 through 16, and 19 and have cancelled claim 25 and respectfully request reconsideration of the application as amended herein.

Preliminary Amendment

Applicants' undersigned attorney notes the filing herein of a Preliminary Amendment on July 16, 2002, which filing was not acknowledged in either the first Office Action or the outstanding Office Action. Should the Preliminary Amendment have failed for some reason to have been entered in the Office file, Applicants' undersigned attorney will be happy to have a true copy thereof hand-delivered to the Examiner.

Teleconference with Examiner

Applicants' undersigned attorney discussed the above-referenced Office Action with Examiner Gay on January 9, 2004. Examiner Gay indicated that the Office Action was intended to indicate claims 8-11, 17, 18, 22, and 23 are allowable. Applicants note with appreciation the indication of allowable subject matter.

35 U.S.C. § 102(b) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 3,621,924 to Lebourg et al.

Claims 1 through 3, 5, 6, 19, and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,621,924 to Lebourg et al. (hereinafter "Lebourg"). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Lebourg discloses an apparatus for producing and retrieving subterranean cores, particularly cores of unconsolidated formations which apparatus comprises a means for cutting the formation to produce a core, a collapsible sleeve means disposed above the cutting means for internally receiving the core produced, and means for producing the fluid pressure on the outer surface of the sleeve, which fluid pressure is greater than the fluid pressure within the sleeve to maintain the sleeve in a collapsed position until the core is received within the sleeve. Pressure valves are provided to maintain the sleeve in collapsed position above the core but to exhaust fluid behind the sleeve as the core enters the sleeve and expands it.

Independent Claims 1, 2, 5, and 19 have been amended. More particularly, each of Claims 1, 2, 5, and 19, as presently amended, recites, *inter alia*, "wherein the at least one port inlet is formed generally within the bit body."

The Office Action indicates in paragraph 10 on page 6 that "channel 20 is clearly shown to b[e] (sic) within the body of the bit." However, Lebourg clearly shows and describes coring bit 30 as being affixed to outer tube section 27 by, presumably, a threaded connection. Col. 3, lines 38-42; Col. 3, lines 20-21; FIGS. 1B and 2. Therefore, the body of coring bit 30 extends to

the threaded connection that overlaps with the lower longitudinal end of outer tube section 27 and does not extend (longitudinally) even arguably near channel 20. Further, Lebourg clearly discloses that channel 20 is formed *between* outer tube section 27 and core barrel 47. FIGS. 1A, 1B and 2.

Accordingly, it is respectfully submitted that Lebourg, does not anticipate the port inlet as recited in independent Claims 1, 2, 5, and 19, as presently amended, because Lebourg does not disclose each and every element of each of the Claims in as complete detail as is contained therein.

Applicants respectfully request reconsideration and allowance of each of independent Claims 1, 2, 5, and 19.

Also, dependent Claim 3 is allowable as depending from independent Claim 2, which is allowable. Applicants respectfully request reconsideration and allowance of dependent Claim 3.

Further, dependent Claim 6 is allowable as depending from independent Claim 5, which is allowable. Applicants respectfully request reconsideration and allowance of dependent Claim 6.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 3,621,924 to Lebourg et al.

Claims 4, 7, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,621,924 to Lebourg et al. Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of Claims 4, 7, and 21 are inappropriate because the prior art does not teach or suggest all the claim limitations and there is no motivation to combine the references.

For clarification, Applicants did not previously nor currently acquiesce that Claims 4, 7, and 21 would be an obvious matter of design choice. Rather, Applicants position as to Claims 4, 7, and 21 being non-obvious is maintained.

However, more particularly, Applicant submits that the prior art reference (or references when combined) must teach or suggest all the claim limitations. No reference that discloses pyramidally-shaped fluid inlets used on core bits has been cited. Further, no assertion that pyramidally-shaped fluid inlets used on core bits were well-known in the art prior to Applicants disclosure has been made.

Even assuming that a pyramidal inlet is disclosed somewhere in the prior art, "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." Ex parte Chicago Rawhide Mfg. Co., 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984). M.P.E.P. § 2144.04(VI)(C).

Further, Applicants respectfully submit that it is unclear how the inlet 20 of Lebourg could be modified to be pyramidal. Specifically, Lebourg discloses that inlet 20 is *annular*. Even assuming that the proposed geometry including both pyramidal and annular characteristics is possible, Applicants respectfully submit that a hypothetical annular, pyramidally shaped inlet would not be obvious to one of ordinary skill in the art.

Therefore, Applicants respectfully submit that Claims 4, 7, and 21 are not obvious over Lebourg.

In addition, dependent Claim 4 is allowable as depending from independent Claim 2, which is allowable. Applicant respectfully requests reconsideration and allowance of dependent Claim 4.

Also, dependent Claim 7 is allowable as depending from independent Claim 5, which is allowable. Applicant respectfully requests reconsideration and allowance of dependent Claim 7.

Additionally, dependent Claim 21 is allowable as depending from independent Claim 19, which is allowable. Applicant respectfully requests reconsideration and allowance of dependent Claim 21.

Obviousness Rejection Based on U.S. Patent No. 3,621,924 to Lebourg in view of Applicants' admitted prior art.

Claims 12 through 16 and 24 through 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lebourg (U.S. Patent No. 3,621,924) in view of Applicants' admitted prior art. Applicants respectfully traverse this rejection, as hereinafter set forth.

The 35 U.S.C. § 103(a) obviousness rejections of Claims 12 through 16 and 24 through 29 are improper the references do not teach or suggest all the claim limitations and there is no motivation to combine the references.

Independent Claim 12, recites, *inter alia*, wherein "the at least one port inlet opens into the cavity at a region thereof defining an annular reservoir, the annular reservoir configured to induce fluid recirculation zones in fluid passing therethrough."

The Office Action indicates on page 4 regarding Claims 12-16 that annular region 80 shown in FIG. 7 of the instant application, which is identified as prior art, includes a surface feature that would cause fluid resistance and recirculation.

Applicants respectfully submit that it does not appear that such fluid resistance and recirculation is taught or suggested by FIG. 7 of the instant application. Rather, Applicants respectfully submit that such behavior appears to be assumed. Further, such an assumption is not proper since one of ordinary skill in the art would not interpret FIG. 7 to teach or suggest that annular reservoir is configured to induce fluid recirculation zones in fluid passing therethrough because the surface feature referred to is a taper that extends between two substantially

cylindrical surfaces. Such a configuration is a relatively smooth transition between annular region 80 and narrow annulus 70. Therefore, one of ordinary skill in the art would not assume that annular reservoir 80 is configured to induce fluid recirculation zones in fluid passing therethrough.

The Office Action indicates that one of ordinary skill in the art would be motivated to make the proposed combination for reducing the deposit of sediment from the drilling fluid at the point of the fluid split. Drilling fluid is used to carry cuttings (sediment) generated by the drill bit upward through the borehole to the surface of the formation. However, Applicants respectfully submit that the drilling fluid passing through the flow split region does so *prior to* encountering the formation (either the core, or the formation being drilled by the core bit). Therefore, it is unclear what sediment to which the Office Action refers.

Furthermore, even assuming, *arguendo*, the presence of a sediment in the drilling fluid prior to contact with the formation, it would appear that settling thereof may be preferred, not avoided, as a means to potentially fill the narrow annulus 74 to thus inhibit flow split. Therefore, it is respectfully submitted that one of ordinary skill in the art would not be motivated to make the proposed combination because reducing settling of sediment may actually increase flow split rather than decrease flow split.

Applicants respectfully remind the Examiner that, "it is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teaching of the prior art so that the claimed invention is rendered obvious . . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." In re Fritch, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992).

Applicants respectfully request reconsideration and allowance of independent Claim 12, as presently amended.

Independent Claims 13 and 15 each recite, as presently amended, *inter alia*, "at least one surface feature extending from a wall of the cavity configured to individually impart resistance to fluid flow in a narrow annulus defined by the wall of the cavity and an outside surface of the core shoe."

Applicants respectfully submit that the chamfer does not merely extend from *a* wall. Rather, the chamfer extends, as a relatively smooth transition, between two walls.

Further, one of ordinary skill in the art would not interpret FIG. 7 to teach or suggest that at least one surface feature extending from a wall of the cavity is configured to individually impart resistance to fluid flow in a narrow annulus defined by the wall of the cavity and an outside surface of the core shoe because the surface feature referred to is a chamfer that extends between two substantially cylindrical surfaces. Such a configuration is, as mentioned above, a relatively smooth transition between annular region 80 and narrow annulus 70. Therefore, one of ordinary skill in the art would not assume that annular reservoir 80 is configured to individually impart resistance to fluid flow. Rather, one of ordinary skill in the art would interpret such a relatively smooth transition between walls of a cavity would smooth or streamline flow patterns in fluid flowing therein, thus reducing pressure loss (i.e., resistance to flow).

As to dependent Claims 14 and 16, each recite, as presently amended, *inter alia*, that "at least one surface feature is selected from the group consisting of: at least one annularly extending squared edge; at least one annular, generally rectangular cross-sectional relief; at least one annular, generally triangular cross-sectional relief; and at least one annular, generally circular cross-sectional relief."

In addition, the Office Action asserts that the surface feature has a triangular cross-section relief. It is respectfully submitted that the surface feature referred to is a *chamfer or taper* that extends between two substantially cylindrical surfaces or walls. It is therefore respectfully submitted that, although the chamfer has one side that is disposed at an angle with respect to the longitudinally upper cylindrical surface, it is not generally triangular.

Furthermore, even if it is assumed that the chamfer has a triangular cross-section, Applicants respectfully point out that it would appear that the other recitations of dependent Claims 14 and 16 are not taught or suggested by the prior art. Specifically, FIG. 7 does not teach or suggest at least one annularly extending squared edge, at least one annular, generally rectangular cross-sectional relief; or at least one annular, generally circular cross-sectional relief.

Applicants respectfully request reconsideration and allowance of dependent Claims 14 and 16, or, alternatively, indication of allowable subject matter therein.

As to independent Claim 24, the Office Action indicates that Lebourg discloses a method for reducing fluid flow through the above bore (59 and 68).

In contrast, independent Claim 24 is directed to reducing a quantity of fluid flowing from an annular region bounded by a wall of a cavity through a core bit and an outside surface of a core shoe disposed therein, and *into a narrow annulus therebelow defined by the wall of the cavity and the outside surface of the core shoe.* (Put another way, in relation to Lebourg, this means reducing flow split or fluid flowing through narrow annulus 61 as taught by Lebourg).

Applicants recognize that the preamble of a claim does not necessarily add limitations to a claim. Rowe v. Dror, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) (" where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation"); M.P.E.P. § 2111.02.

However, Applicants respectfully submit that during examination, statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the recited purpose or intended use results in a structural difference (or, in the case of process claims, manipulative difference) between the claimed invention and the prior art. If so, the recitation serves to limit the claim. See, e.g., In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963); M.P.E.P. § 2111.02. Applicants respectfully submit that, since the recited purpose is recited in relation to structural aspects of an assembly and the recited purpose is in direct conflict with the operation of the structure of Lebourg, it may clearly be appreciated that the structure of Lebourg is different from the recited structure.

Particularly, Applicants note, for clarity, that the narrow annulus between the cavity of the core bit 30 and the cavity of the core shoe (not labeled) as shown by Lebourg is labeled 61 in FIG. 1B thereof. Further, Applicants respectfully submit that bore 59 as taught by Lebourg is not *defined by the wall of the cavity and the outside surface of the core shoe.*

Further, Applicants respectfully submit that it enlarging the cross-sectional area hydraulically *preceding* bore 59 and 68 would *not reduce* the fluid flow through narrow annulus 61. Therefore, Applicants respectfully submit that Lebourg does not teach or suggest all the claim limitations.

As mentioned above, it appears that the configuration of Lebourg would *increase* rather than decrease the flow through the narrow regions 61 as disclosed by Lebourg. Further, Applicants respectfully submit that Lebourg does not disclose enlarging a cross-sectional area of the port inlet of each port of the plurality of ports relative to a cross-sectional area of the bore of each port of the plurality of ports, each port inlet of the each port proximate to the annular region.

Thus, the differences in structure between Lebourg and the claimed limitations would not motivate one of ordinary skill in the art to make use of the teachings of Lebourg in view of other prior art to arrive at the claimed subject matter.

Dependent Claim 28 recites, *inter alia*, "recirculating fluid within the annular region."

Applicants respectfully submit that it does not appear that fluid recirculation in the annular reservoir is taught or suggested by FIG. 7 of the instant application. Moreover, Applicants respectfully submit that Lebourg does not teach or suggest fluid recirculation within the annular reservoir. Because the references do not teach or suggest recirculating fluid within the annular region, Applicants respectfully submit that such recirculation behavior appears to be assumed. Applicants respectfully submit that such an assumption is not proper since one of ordinary skill in the art would not interpret FIG. 7 to teach or suggest that annular reservoir is configured to induce fluid recirculation zones in fluid passing therethrough because the surface feature referred to is a taper that extends between two substantially cylindrical surfaces. Such a configuration is a relatively smooth transition between annular region 80 and narrow annulus 70. Therefore, one of ordinary skill in the art would not assume that annular reservoir 80 is configured to induce fluid recirculation zones in fluid passing therethrough.

Further, dependent Claim 28 is allowable as depending from independent Claim 24, which is allowable. Applicants respectfully request reconsideration and allowance of dependent Claim 28.

Independent Claim 26 recites, *inter alia*, "imparting circumferential flow to fluid within an annular reservoir in fluid communication with the narrow annulus."

Applicants respectfully submit that it appears that none of the cited art is purported to teach or suggest imparting circumferential flow to fluid within an annular reservoir in fluid communication with the narrow annulus.

Therefore, Applicants respectfully request reconsideration and allowance of independent Claim 26.

Dependent Claim 29 recites, *inter alia*, "recirculating fluid within the annular reservoir."

As discussed above, Applicants respectfully submit that it does not appear that fluid recirculation in the annular reservoir is taught or suggested by FIG. 7 of the instant application. Further, Applicants respectfully submit that Lebourg does not teach or suggest fluid recirculation within the annular reservoir. Rather, Applicants respectfully submit that such recirculation behavior appears to be assumed. Further, such an assumption is not proper since one of ordinary skill in the art would not interpret FIG. 7 to teach or suggest that annular reservoir is configured to induce fluid recirculation zones in fluid passing therethrough because the surface feature referred to is a taper that extends between two substantially cylindrical surfaces. Such a configuration is a relatively smooth transition between annular region 80 and narrow annulus 70. Therefore, one of ordinary skill in the art would not assume that annular reservoir 80 is configured to induce fluid recirculation zones in fluid passing therethrough.

Also, dependent Claim 29 is allowable as depending from independent Claim 26 which is allowable. Applicants respectfully request reconsideration and allowance of dependent Claim 29.

Independent Claim 27 recites, as presently amended, *inter alia*, "creating fluid recirculation zones along the inside surface of the core bit to impart resistance to fluid flow in the narrow annulus."

As discussed above, Applicants respectfully submit that it does not appear that fluid recirculation in the annular reservoir is taught or suggested by FIG. 7 of the instant application because the surface feature referred to is a taper that extends between two substantially cylindrical surfaces. Applicants respectfully submit that neither Lebourg nor FIG. 7 of the instant application teaches or suggests all the claim limitations of independent Claim 27.

Therefore, Applicants respectfully request reconsideration and allowance of independent Claim 27, as presently amended.

ENTRY OF AMENDMENTS

The amendments to Claims 1, 2, 5, 13 through 16, and 19 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings.

CONCLUSION

Claims 1 through 7, 12 through 16, 19 through 21, 24, and 26 through 29 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,

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